

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1-9. (Canceled)
10. (Currently Amended) A domestic oven comprising:
an oven compartment for receiving food;
a heating element to heat the oven compartment for cooking food;
a gas sensor in fluid communication with the oven compartment and outputting a signal indicative of the gases emitted by food being cooked in the oven compartment;
a central processing unit operably coupled to and controlling the heating element;
a user interface operably coupled with the central processing unit such that a user can set ~~the-a~~ type of food placed in the oven compartment and set ~~the-a~~ desired degree of cooking of the food; and
wherein the central processing unit is configured to receive a gas sensor signal, food type, and degree of cooking, and controls the operation of the heating element to cook the food for a cooking interval until the desired degree of cooking is reached, with the cooking interval being determined by ~~and-filtering~~ the signal from the gas sensor, with an amplitude of filtering depending on the type of food set by the user, ~~to determine a cooking time of the food and to control the operation of the heating element as a function of the determined cooking time and at least one of the type of food and the desired degree of cooking set by the user.~~
11. (Currently Amended) The domestic oven of claim 10 wherein the central processing unit is further configured to determine the cooking time-interval as a function of the signal received from the gas sensor, a temperature of the oven compartment and a control algorithm for the oven.
12. (Currently Amended) The domestic oven of claim 10 wherein the central processing unit is further configured to determine a gradient of the signal, and wherein the

determined gradient is compared with predetermined values stored in the central processing unit for determining the cooking time interval.

13. (Previously Presented) The domestic oven of claim 10 further comprising a duct fluidly coupled with the oven compartment and wherein the gas sensor is located inside the duct.

14. (Currently Amended) A method for automatic cooking in a domestic oven having an oven compartment for receiving food, and a heating element to heat the oven compartment to cook the food in the oven compartment, and a central processing unit for controlling the heating element to cook the food, the method comprising:

receiving as input to the central processing unit as input from a user interface a setting of a food type of the food in the oven compartment;

receiving as input to the central processing unit a setting of a desired degree of cooking of the food in the oven compartment;

receiving as input to the central processing unit a signal from a gas sensor indicative of gas emitted by the food being cooked in the oven compartment from a gas sensor in fluid communication within the oven compartment;

the central processing unit processing filtering the signal from the gas sensor for the set food type according to a function of the type:

$$F(t) = \frac{(t_a - t_b)^\alpha}{(Y_a - Y_b)^\beta}$$

where Y_a and Y_b are values indicative of the signal from the gas sensor at a time t_a and t_b , respectively, and α and β are coefficients obtained experimentally for the set food type;

the central processing unit determining a gradient of the function $F(t)$; and

the central processing unit determining a cooking time interval of for the food as a function of the degree of cooking and the determined gradient of the function $F(t)$; and

operating the heating element for the cooking interval to cook the food to the desired degree of cooking.

15. (Currently Amended) The method of claim 14 further comprising modifying the a cooking time interval as a function of a degree of cooking of the food set by a user.